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BOARD OF AGRICULTURE—THE CHIEF VETERINARY OFFICER'S ANNUAL REPORT FOR 1916.

The Report is very interesting; though, in accordance with general instructions, all the subjects it includes, with one exception, are treated very briefly. The exception is swine fever, on account of the special work done upon it during the year; and the abstract of this portion of the report which we publish on another page shows how important it has been. We reserve this subject for future comment, and to-day only notice the other sections of the report.

The one outbreak of foot-and-mouth disease in 1916 is described in some detail. Its most noteworthy feature is that, as in so many other isolated outbreaks of this disease, the source of origin could not be established.

The report of glanders is good, especially when its details are examined. Only 44 outbreaks in civilian horses occurred in 1916; and only 16 of these were in London and its surroundings—that is, in London, Essex, Kent, Middlesex, and Surrey. The recent decrease in this area is remarkable; for the figures are 69 in 1914, 30 in 1915, and 16 in 1916. The Chief Officer justly remarks that the position in London and its environs "is most encouraging, and calls for a special effort by the Local Authorities to eradicate the disease finally." Outbreaks in some other parts of the country increased in 1916; but their total was small, and it is far easier to deal with glanders outside the London area than within it. This is perhaps the most hopeful section in the report.

There are some noteworthy points concerning the 560 confirmed outbreaks of anthrax, which involved 1·2 animals per outbreak. Fully 434 of them were on previously clean premises; and a table of the causes which enquiries indicated as the probable sources of origin of these is given. Imported feeding stuffs is blamed for 253 outbreaks, imported artificial manure of animal origin for 37, and the two together for 67, In 52 outbreaks no explanation was obtainable, and 10 others are rather unsatisfactorily ascribed to "a recent death, not reported, but not improbably anthrax," which leaves only 15 remaining outbreaks attributed to four other causes. The Chief Officer makes no comment upon these figures—perhaps wisely, for we think that the anthrax problem is much more complex than they might suggest at first sight.

The Chief Officer speaks severely of the increase (probably solely explicable by war conditions) in the practice of bleeding animals at the point of death or just afterwards, and dressing the carcases. His figures are serious. Fifty-six anthrax carcases were opened in 1915, and 90 in 1916; and the result in 1916 was six cases of human anthrax and certainly some dissemination of the disease in animals. The need for stopping this is evident; and few men can do more against it than veterinary practitioners.

Sheep scab is dealt with briefly. In 1916 it increased sensibly in England and considerably in Scotland (the figures for the two countries were 24 and 139 outbreaks respectively over the 1915 totals), while it decreased slightly in Wales. No scab in Great Britain was traced to infection from Ireland, though 144 cargoes of affected Irish sheep were stopped at the ports; but fully 27·7 per cent. of the English scab arose directly from infection from Scotland. Our record for the last five months of 1917 suggests that the Board is surmounting the scab difficulty. The Report tells us something of what the difficulty last year was, but not very much; and it is noticeable that it attempts no explanation of the causes.

Several other items, which the Report mentions very briefly, are worth noting. Of 213 specimens of unscheduled disease received and examined at the laboratories 180 were fowls, which suggests that some owners have begun to realise the importance of poultry and their diseases. Swine fever investigations continue to incidentally reveal a serious amount of swine tuberculosis and swine erysipelas, indicating new fields for the Board's activities; and the fact that 8,309 doses of anti-abortion A vaccine were issued in 1916 shows how much is now being done in another recently opened field. All these points show how the scope of the Board's activities is widening, and the room for further extension that still exists. Altogether the Report, brief and perhaps over-condensed as it is, is a most interesting summary of a year's good work under unfavourable conditions.

NOTES ON TETANUS.

The fact of experienced practitioners trying new methods of treatment for this disease shows that they have not yet got a remedy in their hands upon which they can rely as a curative.

I should like to get different opinions and experiences with serum. I have had some very acute cases recover in my hands when using serum; but I cannot persuade myself that the serum has any good effects whatever. I have had just as good results when no serum has been used.

I attended an aged mare some years ago for this disease. As she was not a valuable animal, the owner wished that she should have a chance without much expense. I put her in slings, gave her

some alterative medicine in her drinking water, and with fairly good attention she pulled through all right. I must say she look a hopeless case at one stage of her illness: she was in poor condition, rather lame on one hind leg, and a large ulcer formed in her right eye. This is the only case I have had of the eye being so badly affected, although I have seen cases recorded. The eye came quite sound.

The animals that recover from this disease would, in my opinion, recover if kept in quiet surroundings—in slings if necessary, without any other treatment whatever. The serum ought to give its best results as a preventive, but how rarely are we asked to use it as such.

A large percentage of cases are in the acute stages of the disease before we are called in, and of course a number of them die. It is for those acute cases that we so urgently need an agent that will give immediate though only temporary relief.

I have not yet seen a case of tetanus from which the animal died of starvation. However acute the trismus they can nearly always suck in sufficient nourishment to keep them alive over the worst stages. It is the spasm of the diaphragm stopping respiration that causes death. I saw, last year, a twelve-weeks old boar pig that had been castrated about ten days, in the last stages of this disease. It seemed to be fighting for its breath, and every few minutes it reared up on its hind legs, evidently trying by this means to get more fresh air.

Perhaps no disease offers so characteristic symptoms for easy diagnosis when fully developed, but in the earlier stages, or in a very mild case, it may take all our powers of observation to recognise it.

Some years ago a client asked me to look at a hunter that he had on trial. It had come by rail, and he thought it had been knocked about in the horse-box. When I went into the loose box where he was I thought I saw a glimpse of the "tetanus-look" on his face. Though I spent some time moving him about, I could not see it again that evening. I examined him again two days afterwards and could then say definitely that he had tetanus, and in time to stop the sale. He ultimately made a good recovery, but there was a difference in the price to my client.

Two days ago I attended a foal for a punctured wound in the thigh. The injury had been received nine days previously. The owner said he wished me to see it, as it was going stiff and he was afraid it had lockjaw. All that could be noticed on moving the animal was a distinct stiffness in the movement of his legs. Coming on at the time it did, it was at least suspicious, but I could see nothing about the face or general appearance to decide me. I was of the belief that it was suffering from congestion of the fore feet. I gave it a mild aperient drench, and the stiffness passed off in a few days. I have never seen the stiffness caused by this disease localised to one part of the body. It is always generalised. But I have attended an animal for the most acute trismus, that never had any trace of tetanus about it. The trouble only lasts for a few days, and I should be glad to have an opinion as to the cause.

Twenty years ago I attended a young Shire mare suffering from tetanus in a fairly acute form. She made a good recovery. Three years afterwards she had it again, just as acute, and again made a good recovery. Does one attack of the disease confer any immunity, and how long does it last?

I have seen several cases of the disease in cattle, but never yet saw one recover. A nice heifer had it very acute, so that she could not lie down in the natural position. She stood in slings all right for a couple of days, and died. She had smashed one of her horns about a fortnight previously.

A calf took it so acutely ten days after castration that it died in a few days.

We attended a cow for milk fever on Dec. 12, 1912, on a farm six miles out. The farmer told us that she had only been delivered that afternoon by a dealer from whom he was buying her. He drew the dealer's attention to her being ill, and told him the cow would be there at his risk till she was all right. She recovered from milk fever next day, but though she fed pretty well, she seemed rather dull. On the 22nd she showed signs of tetanus, and by the 24th it became acute, and she died next day. I think this is an unusual occurrence after calving. The dealer sued the farmer in the County Court for the full value of the cow, and was successful in his claim.

I have strung these few crude notes together with the hope that others may give their experiences and opinions on this disease.

Stevenage, Herts. J. PATON, F.R.C.V.S.

[Since writing the foregoing notes I have read with great interest the article by Mr. Lothian, on Tetanus, in last week's *Record*.]

During the past month several practitioners have reported in *The Record* their experiences of the various treatments for the cure of tetanus.

The injections of solutions of magnesium sulphate; of camphorated oil, and the open-air treatment have all come in for their share of praise. As the value of drugs in the treatment of this disease has come to be questioned, I thought it might be of interest to record that whilst in Egypt during 1915 four cases of tetanus came under my care. No anti-tetanic serum being available at that time, these four animals (two horses and two mules) were perforce to go without any treatment. They were tied up in the quietest portion of the lines and sheltered from the sun.

The only food given was chopped Burseem (green forage) and a plentiful supply of water. One mule and one horse made a good recovery. These results would appear to be identical with those recorded by Mr. Collinson in *The Record* for August 18th, 1917.

The question which would arise is, "Do any drugs, save narcotics, exert a favourable influence on the course of the disease?"

I am convinced that the administration of large doses of anti-tetanic serum is productive of beneficial results, but my confidence is sadly shaken in value of other drugs as applied to the cure of tetanus. "BELLUM."

EPSOM SALTS.

By W. R. Davis.

You were good enough to publish some time ago a communication from me on the danger of giving, as routine treatment, doses of Epsom salts to cattle. I have recently had two fatalities in cows belonging to the same man from the exhibition of mag. sulph.

On May 18th a small farmer sent for me to attend a cow, which had calved two days previously and had not cleansed. I found the patient greatly distressed, with rapid painful breathing, high temperature, fast pulse, and with abnormal sounds on both sides of the chest. The owner informed me that three weeks previously the cow had fallen into a pond, and he was inclined to attribute her illness to the immersion. I elicited, however, that the difficulty of breathing had only been observed after the cow had received a cleansing drench consisting of salts and gentian.

The animal died the same day, and the post-mortem disclosed traumatic pneumonia as the cause of death—a part of the drench had gone the "wrong way."

On July 6th the same farmer sent for me to attend another cow suffering from constipation. He had back-raked the animal and removed a quantity of very hard pellets of dung. Two drenches, each containing one pound of Epsom salts, had been administered. On palpating the left flank a mass of solid ingesta could be made out. The cow was unable to rise; temperature subnormal (99), pulse rapid and difficult to take at the fetlock, extremities cold, eyeballs retracted, eyelids partly closed, tears running down the face; a faint grunt accompanied each respiration. Treacle and stimulants (am. carb. et ether) were administered, but the patient succumbed early the following morning. This small farmer's amateur doctoring cost him about £75—a rather serious loss for a small man.

SWINE FEVER.

I happened to find in my grip a copy of *The Record* for March 17th, which probably I had not time to read on receipt. In it is a paper on Swine Fever, read before the Midland Counties V.M.A. by Mr. J. O. Powley, of the Board of Agriculture. Speaking of "methods of spread," I think he omitted a very important one—the rat. There is no haunt the domestic rat loves more than a hog pen, and no food he likes better than the pig's; further, he is some traveller, and has a habit of suddenly leaving one abode for another. I have known them leave the stock-yard and then appear in the hedgerow of a corn field, nearly half-a-mile away. I have several times cleared my farm buildings of rats, but as many times had new importations from my neighbours. I have reason to think those who keep pigs sent me most, and they were in the best condition.

A word of warning! Once, after liberally using a certain rat poison in the ricks the day of reckoning arrived, and shortly following threshing operations I lost a real good young pig (no more rat poison for me). Post-mortem: inflamed stomach, etc., which left me a sadder, but wiser man.

When in Cincinnati, U.S.A., I remarked to the manager of the stock-yards, "You have some rats." His reply was, "Yes; but they often leave us, and we don't see anything of them for quite a while. We don't know what makes them move."

They carry hogs in most of the large stock-yard pens in the U.S.A., and the great prevalence of of swine fever out there somewhat confirms my opinion. The only feed the hogs get in the States is corn (Indian) on the cob, with a supply of water. The farmers keep them in the open, and all run together; I have seen a boar and little pigs a few days old laying down side by side.

I guess if the Board of Agriculture would exterminate the rats, they would mighty soon reduce the outbreaks of swine fever. Any way, that is the opinion of

John Blakeway, F.R.C.V.S.

At sea, Aug. 28.

AN EXTENSIVE WOUND.

The subject was a grey, four-year old, half-bred mare, in gross condition, running out at grass with three other colts; something startled them, they galloped down the field they were in, through a gateway on the clapping post of which was an old, bent catch projecting. They all jammed through together; the colts shouldered the grey mare against the catch with such force that it entered on the near side, about 3 inches below the withers and tore open the skin and tissues underneath right away to the hip. The mare continued to gallop with the others for some considerable time after, and as she went the cut side fell down and she kicked at it all the time.

At length the mare was caught and taken into a loose box. I got a man to hold the side gradually up while I put 16 strong tape stitches in, which had been soaked in creolin and oil, equal parts, taking a good hold of both edges of the skin. Afterwards, I cut a slit about 4 inches long at the most dependent part, syringed the whole side out from the top through this lower opening with tinct. iodi. and water, then gave the mare a fever draught with chloral ʒss and two bols. stim., and left six fever powders, containing mag. sulph. and pot. nit *aa* ʒss, one *bis die*. The next day I gave a bol. alt., containing aloin ʒi, nux vom. ʒi, zingib ʒii, and pot. nit. ʒss. The wound was well irrigated out night and morning for about nine days—sometimes with Lysol, another time sol. iodi., or creolin, and a few times with hydrarg. perchlor. 1 in 1000, as there was some fetor. The pulv. feb. were continued for a time, and later tonics were given, and the wound irrigated once a day.

It being summer time, the mare was kept chiefly on grass or young clover for the first week, then she was allowed a feed of crushed oats night and morning. The animal did not lie down for some time, which may have helped the wound in the way

of giving it rest; but beyond being feverish for a few days (102F.) she went on well. No end of rubbish, hair, fat and clotted blood came from the bottom slit for some time.

I thought myself fortunate that neither pleurisy nor septic infection supervened.

I saw two freaks of nature recently which are uncommon, namely, a sow with a litter of pigs, all healthy, but they were born without eyeballs, the orbits being perfectly empty; the pigs showed that they had very acute hearing.

The other freak was an hermaphrodite, namely, a gilt pig showing two well-developed testicles but no penis, of course, she urinated per vulva. I have seen a few combining both sexes of the equine and bovine species, but not of a pig before.

W. CURETON, M.R.C.V.S.

ABSTRACTS FROM FOREIGN JOURNALS.

OBSERVATIONS UPON THE SYNGAMUS BRONCHIALIS.

While there is an ample literature concerning the *Syngamus trachealis*, which is common in the pharynx and trachea in farm-yard poultry, very little is yet known of the allied species *Syngamus bronchialis*. The latter worm was exactly described for the first time by Mühlig, after which little has been said of it. W. Feuereissen has therefore undertaken a new research, which he reports in *Die Zeitschrift für Fleisch. und Milch hygiene* of this year.

Feuereissen first studied a young goose, coming from a flock of twenty-five which had fallen ill after having several times being in a muddy pond. Many of them died, having shown asthma, loss of appetite, and debility.

Post-mortem, the author found 72 strongylides in the trachea and in the bronchi of this goose. The trachea contained 11 fairly large reddish worms; while the bronchi contained numerous others of analogous appearance but of whitish colour, which had penetrated even into the finer bronchioles. The large worms were attached by the head to the mucous membrane of the trachea; but the majority of the others were not attached to the bronchi. About one-third of these parasites were in copulation, which was less firm than that seen in *S. trachealis*. The author's observations confirm in general the exact zoological description given by Mühlig, except that he found the worms a little larger than the older worker.

In a second young goose, the trachea and lungs were free from strongylides; but, at the time of examination, the carcase was almost completely decomposed, and invaded by the maggots of flies. The right portion of the abdominal air sac was swollen from the presence of a caseous exudate fragments and eggs of strongylide. This showed that these strongylides can penetrate into the vacuoles of the avian air cavities—a fact which should be borne in mind when making post-mortem examinations.

The evolutionary cycle of the *S. bronchialis*, like that of the *S. trachealis*, is not yet known; which is a disadvantage in considering the question of combating it.—(*La Clinica Veterinaria*).

[A description of *S. bronchialis* is to be found in Macqueen's edition of Neumann's work on Parasitology.—*Transl.*]

BOVINE MORTALITY IN GERMANY CAUSED BY SIMULIUM REPTANS.

In the districts of Neustadt and Fallinghostel, Prussia, a disease has appeared for ten years which regularly causes the death of a large number of animals at pasture, generally a little time after they have been placed there (April and May). The disease almost always affects cattle, and only rarely horses.

In May, 1913, 46 cattle and 5 horses were affected in the two districts. Of these, 29 cattle and one horse died. In 1914, in the district of Neustadt, 42 cattle died at pasture in a few days. In 1915, the damage was less severe. The disease always diminished when the farmers kept the animals indoors.

Investigation of the disease by Matthiesen and Beutler demonstrated that the death of the animals followed punctures made by the *Simulium reptans*, which abounds it the pastures in question. The affected animals showed great nervousness, continually moved about the pasture, and sought to free themselves from the *Simulium*. Upon the bare parts of the body—the pavilion of the ear, the udder, and the abdomen, numerous punctures resembling those of fleas were found, which were often bleeding.

Nothing is certainly known of the nature of the disease caused by the *Simulia*. Damman and Oppermann have believed that in some cases it may be a hæmorrhagic septicæmia, because they have noticed the presence of the bi-polar bacillus in *S. ornatum*.

In 1916, also, *S. reptans* made numerous victims among the animals at pasture. The atmospheric temperature, which remained comparatively low till April 20, now rose gradually, and thus enabled the flies to appear in great numbers and to infect cattle and sometimes horses also.

Matthiesen and Beutler went immediately to the district of Neustadt. They were able not only to observe a large number of animals ill or dead, but also very often to determine the situation of the infested pastures and the epoch of the appearance of the disease. They found the pupæ of the *Simulium* in flowing water, even in pastures which up to that time had remained immune.

In attentively observing the hæmorrhages of the skin in dead animals, a black point was noticed in the middle which represented the canal of the puncture. The cardiac muscle showed capillaries heavily filled with blood, and degenerative changes. Bacteriological examination of the cardiac blood, the lymphatic glands, and various parts of the spleen, gave in general negative results. Only some *B. coli* were found; and these had probably

entered the organism after death. Mice inoculated with the material examined remained alive.

The symptoms of the disease often appeared very rapidly, sometimes only a few hours after the puncture: this interval probably depends upon the quantity of poison or virus introduced into the organism. Death or recovery may appear at very different periods.

In cattle, the parts more frequently punctured—the udder, scrotum and flanks, were never swollen, but the corresponding lymphatic glands fairly often were. Swellings were seen under the throat and in the neck; these resulted from cardiac debility which was caused by the intoxication, and exercised more or less influence upon the brain. When lying down, the affected animals often assumed positions similar to those of cows in milk fever, probably as a result of cerebral anæmia. They ate and digested with difficulty, showing weakness in the peristaltic movements; but there were no cases of fever. Two-thirds of these affected animals died.

It is probable that animals which have been at pasture for some time are less susceptible to the punctures.

Since 1914, in the province of Hanover, farmers have been officially advised to keep their animals away from the pastures during the time at which Simulium appears in great numbers, and especially in April and May. Instructions, however, though published in each spring, did not prevent great losses of cattls in 1916. Good results were finally obtained by a police order published at the end of April, 1916, prohibiting the pasturage of cattle in the threatened districts before May 15, except upon cold and rainy days, and at night. This was supplemented by official advice to farmers not to pasture cattle on warm days for some time after May 15, which proved equally efficacious. Matthiesen and Beutler recommended that the same prohibitive regulation should be adopted in 1917; the period of interdiction to be lengthened to run from April 1 to June 1.—(*La Clinica Veterinaria*).

Auscultation of the Uterus in the Small Animals.

Bedel, in 1912, made a communication to the Central Society of Veterinary Medicine on this subject, commencing with a historical survey. Dr. Mayer, a surgeon of Genoa, was the first to recognise the heart beats of the human fœtus by auscultating the abdomens of some women near the end of pregnancy. This was in 1818. Since that time, and especially after the communication of Lejumeau of Kergaraded in 1821, this phenomenon has been the subject of many works by medical men, to whom it renders important services.

In veterinary medicine Lafone, in 1857, was the first to announce that the pulsations of the fœtal heart are sometimes perceptible, though feebly so. He detected them in some cows which had reached the sixth month of gestation. Almost at the same time Hollman made a similar discovery. Saake, Saint Cyr and Violet, Lucet, and others, afterwards published works on the subject. All these works relate to the cow; and, according to Bournay, when he published his work on veterinary obstetrics in 1900, the fœtal heart beats had been detected in this animal alone.

Bedel has been able to hear these pulsations in the bitch, ewe and goat. He used a small phonendoscope called a "universal stethoscope," or "stethoscope-phonendoscope." With this it is possible to clearly distinguish the pulsations in the small domestic females, and consequently to affirm the presence of one fœtus or of several, according to the number of centres of auscultation found.—(*Revista de Higiene y Sanidad Veterinaria*).

W. R. C.

CONTROL OF SWINE FEVER.

The following details of procedure and results in the endeavour to control Swine Fever form the major portion of the Annual Report of the Chief Veterinary Officer, B. of A., for 1916, recently issued. The arguments which lead up to the procedure were given at the meeting of the Midland Counties V.M.A., in February last (*V.R.*, pp. 384, 394).

An interim report on the results of the serum treatment for the first quarter after its introduction was published in 1916, together with a comparison of the old method of dealing with the disease and the new. It is now possible to report on the results over a period of twelve months starting from the date of its introduction—September, 1915—and extending to September, 1916.

The observations are unique in the sense that this is the first time that general serum treatment, together with quarantine restrictions on infected premises all over a country, has been tried as a life saving and economical policy. It seems desirable, therefore, that the plan of the operations should be outlined and the results so far obtained reported upon with some fullness.

Method of Immunising.

(*a*) An adequate number of veterinary practitioners appointed from time to time in various parts of the country act as Local Veterinary Inspectors of the Board, and visit reported outbreaks when instructed. The services of these inspectors are supplemented by Assistant Veterinary Inspectors, Veterinary Inspectors, and Superintending Veterinary Inspectors whose time is wholly employed by the Board on work in connection with diseases of animals.

(*b*) All Veterinary Inspectors are provided with a supply of serum in convenient form from the Board's Laboratory, and are instructed to keep up their supply by immediately applying for more as their stock is drawn upon for use in connection with outbreaks.

(*c*) The serum issued is mainly centrifuged serum, but owing to the amount required and shortage of staff a considerable amount of defibrinated blood had to be issued in place of serum. The doses instructed to be given are according to the estimated weight of the animals; in the case of defibrinated blood they are higher than when serum is used.

(*d*) On receipt of a police report by wire that swine fever is suspected to exist, the Board instruct by wire the nearest Veterinary Inspector to visit the premises and make a diagnosis. He is instructed generally to take with him a reasonable supply of serum. The diagnosis is arrived at by inquiry, including post-mortem examinations, and the diagnosis of inspectors in the field is immediately reviewed at the Board's Laboratory to which the viscera are sent together with the veter-

inary report, or, in certain cases in which viscera are not sent, at the office. Should the visiting Inspector diagnose swine fever, he, without waiting for confirmation of his diagnosis, carries out treatment with serum if the owner agrees. Should the first diagnosis be wrong in the sense that further inquiry shows swine fever not to exist nothing further happens. Should the Veterinary Inspector report that disease does not exist, and it is found by the investigation at the Laboratory that the disease is swine fever, an Inspector is immediately instructed to re-visit and offer serum treatment.

(*e*) The acceptance of treatment by the owner is at his option. Should he accept, and treatment is applied to all or a portion of his pigs, he is advised to allow the healthy pigs treated on the infected parts of the premises to mix with the affected pigs, in order that they may have the opportunity of acquiring lasting immunity by contact with infection while under the influence of serum. As the resistance bestowed by serum lasts only for about ten days, after which the pigs again become susceptible to swine fever in a fatal form if direct contact with infection is not obtained previously, the only alternative to allowing the treated pigs to mix with the ailing is to give repeated doses of serum until all the ailing are dead or recovered; but that is not practicable in dealing with thousands of pigs all over the country, and the aim has been rather to get the greatest benefit practicable under the conditions which obtain in practice. When large numbers of healthy pigs are in contact, so that it is impossible to bring about proper mixing, second, and even third doses of serum are sometimes given, according to the circumstances of the outbreak.

(*f*) Veterinary Inspectors, by instructions, pay periodical visits to the outbreaks, and report as to the condition of the pigs. It is from these reports that the records of the results of treatment have been compiled after analysis in each case.

(*g*) Healthy pigs may by licence be moved off infected premises for immediate slaughter, and other pigs may be moved on for fattening purposes, the latter being usually treated with serum on arrival. The owner is thus able to continue his pig-feeding business at least, although infection may be present on his premises.

(*h*) During the first part of the period the Board thought it advisable for purely administrative reasons to give owners the option of having all pigs visibly ill from swine fever on the day diagnosis was made by the Veterinary Inspector slaughtered with compensation. Some owners availed themselves of this option, others preferred to keep the ailing pigs for purposes of mixing with healthy pigs under the influence of serum. From the 25th of June this partial slaughter of ailing pigs was discontinued.

During the twelve months under review the proportion of suitable cases in which serum treatment was accepted, though not necessarily for all the pigs on the premises, was 83 per cent. In the remaining cases owners declined in 409; in 1008 cases (usually small piggeries) no pigs were left for treatment; in 456 cases the conditions were unsuitable (whole of stock infected, or disease confined to one well isolated group); in 431 cases the owners slaughtered all their healthy pigs for food rather than risk further losses. In 20 cases serum treatment was not offered.

Certain pigs on infected premises were not treated —for various reasons, and these may be grouped as follows:—(i) the pigs were intended for immediate slaughter, or owners declined for certain pigs, usually because they were meant for slaughter at an early date; (ii) the pigs were considered not to be exposed to infection on account of the arrangement of the sties, or because they were born or moved on to the premises after acute infection had died down: (iii) owners having had part of their herds treated sometimes changed their minds as regards the remainder; (iv) in the case of weakly suckers it was often deemed advisable not to treat them.

Aggregate of Treatment. During the twelve months referred to serum treatment was applied in 2100 outbreaks, in which 77,900 pigs were involved. For reasons which have already been outlined, and because a considerable number of the pigs were dead or ailing before the Veterinary Inspectors were put in touch with the outbreaks, the number of pigs treated, though large, was considerably less than the total number involved. The whole figure, however, made up as it is of separate cases which have been carefully compiled by the Veterinary Department after analysis, is a useful one for comparison (so far as such comparison can be made) with the whole figures relating to those outbreaks which were not treated by serum during the same period. The latter figures, however, were not compiled for this purpose, nor were they available for the same form of analysis as those relating to serum-treated outbreaks, and they do not include the complete details necessary for a full comparison. Nevertheless, a useful comparison can be drawn between the whole figures in each case.

Of the 77,900 pigs included in the outbreaks treated with serum the total death-rate from swine fever, which included a large number of deaths in pigs which for various reasons were not treated, amounted to 34·6 per cent. The number slaughtered for food during the outbreaks amounted to 25·8 per cent. The number freed at the end of the outbreaks amounted to 38·6 per cent., which included a large proportion of the breeding stock, most of the stores having been slaughtered in accordance with the object for which they were intended. Deaths from other causes than swine fever are omitted.

During the same period 38,229 pigs were involved in outbreaks on premises upon which serum treatment was not adopted. The total death-rate amounted approximately to 52 per cent. The number slaughtered for food during the outbreaks, often at an early stage to save their commercial lives, amounted approximately to 33·2 per cent. The number freed at the end of the outbreaks amounted to only 14·8 per cent. In both cases the death-rate is calculated in relation to the total number involved.

The claim for serum treatment is that it saves pig life on infected premises, and it would appear from the above figures that, viewed from the death-rate alone and under the conditions obtaining in practice, without taking into account special benefits, such as conservation of breeding stock and business, there was a benefit of 17·4 per cent. in favour of the pigs on premises where serum treatment was applied, notwithstanding the fact that the deaths on these premises included a very considerable number of pigs which for various reasons were not treated.

Analysis of Results.

From the notes on observations made in connection with each outbreak in which treatment was adopted, it is possible to make a more detailed analysis of the results as a whole and to comment on several points of importance in connection with the application of serum treatment for swine fever in practice.

(1) Of the 77,900 pigs (average in herd 37·1) 10,085 (12·9 per cent.) were dead of the disease before treatment was adopted; these are included in the death-rate in viewing as above the results of treatment as a policy under the conditions obtaining in practice. Before treatment a further number, 1851 (2·4 per cent.) considered to be healthy were slaughtered for food. The remainder, 65,964 (84·7 per cent.), constitute the stock isolated during the outbreak.

(2) Of the stock isolated 54,687 were on the premises from the beginning (original stock), 9577 were born

(practically all of them from sows which had been treated), and 1700 new pigs were moved on to the premises during the period of isolation. Obviously some of them must have encountered a less degree of infection than others, according to the stage of the outbreak at which their advent took place.

Of the original stock, 41,788 were treated with serum; 6773 apparently healthy pigs were not treated for one of the various reasons already outlined (the greater number are known to have been destined for almost immediate slaughter, and were slaughtered for food), and 6126 were not treated because they were ailing. Of the pigs that were born 3967 were treated and 5610 were not treated. Of the pigs moved on during the outbreak 1262 were treated, and 438 were not treated.

(3) Serum treatment is preventive and not curative, therefore successful results depend largely upon getting in touch with outbreaks before infection has spread to a considerable proportion of the pigs. Serum is practically valueless in dealing with pigs in the grip of infection before treatment. As the rule is for the Veterinary Inspectors to apply treatment to pigs which appear outwardly healthy, it is unavoidable that a number of pigs in the incubative stages of the disease may be treated, owing to their normal appearance. Of the original stock treated (41,788), 6380 (15·3 per cent.) were either dead or so seriously ill at such an early date after treatment that there could be little doubt they were in the incubative stages of the disease when treated. This percentage, taken with that of those dead (12.9 per cent.) before touch with the outbreaks was obtained, appears to show that there is considerable delay in reporting sickness in swine as suspected swine fever. How much of this delay is avoidable it is difficult to say, but it puts a serious handicap on the greater success of the application of serum treatment in practice.

The extent of infection quoted is necessarily in relation to the stock (66,623) on the premises at the time of the reports. It was estimated on the number of dead and distinctly ailing pigs at the visit of the Veterinary Inspector when the diagnosis was arrived at, and those which died or became distinctly ill so soon afterwards as to leave little doubt that they were in the incubative stages of the disease at the time of that first visit.

The following Table indicates the varying extent of infection before treatment and the consequent death rate in the herds concerned in the 2100 outbreaks.

Infection at time of Treatment.	Herds.	Pigs.	Death-rate.
1·0 to 10 % ...	240	17,321	14·1 %
10·1 20 ...	340	16,856	20·3
20·1 30 ...	246	9,906	29·1
30·1 40 ...	266	9,302	37·3
40·1 50 ...	271	6,198	46·6
50·1 60 ...	161	4,988	53·5
60·1 70 ...	170	4,123	64·2
70·1 80 ...	140	3,311	72·4
80·1 90 ...	123	3,234	79·1
90·1 100 ...	143	2,661	85·7

A further amount of important and instructive information in relation to the value of serum treatment can be obtained by comparing the happenings on the same premises in relation to treated pigs with those in the pigs which were not treated for one of the reasons already outlined, as it was almost inevitable that infection would spread to some of the latter during the period of isolation. It should be explained, however, that the two lots of pigs are not quite comparable, or the conditions were more favourable to the pigs which were not treated. The treated pigs were treated because they were directly exposed to infection; many of the others were not treated, because there was reason to think they would escape infection owing to their isolated position. The comparison is further disturbed by many of the stores being slaughtered for food during the isolation period in both lots. It is clear, however, from the notes made on each outbreak that considerably more than half the pigs which were not treated, exclusive of suckers, were slaughtered for food shortly after disease was declared to exist, and they had, therefore, no chance of becoming infected. This is quite a good way of avoiding commercial loss from swine fever, provided the pigs were ripe for slaughter, and the valuable breeding stock is not included in the slaughter.

Many of the untreated stores, however, were slaughtered unripe, whereas most of the treated stores were kept alive and fattened, and it will be seen from the table that the proportion of breeding stock slaughtered amongst the untreated pigs was enormous—58 per cent. as against 21·9 per cent. of the treated. As a rule breeding stock is not slaughtered for food unless the animals have become unsuitable—too old, too fat, bad mothers, unprolific, etc., or when they are in danger of contracting a fatal disease.

On infected premises, then, the proportion of breeding stock dead of the disease added to that slaughtered for food forms one fairly good basis for comparison between the treated and untreated, provided, as was the case, that infection eventually reached the latter in their more isolated position (*see* Table). The proportion of the valuable breeding stock freed at the end of the outbreaks to continue reproduction is obviously important.

The suckers which were treated in the two lots were in the infected parts of the premises from the first, and the mortality in this class of pig of delicate age was high in spite of the treatment. In more than half the suckers which were not treated, treatment was dispensed with because they were born at the later stages of the isolation period, when there was much less, indeed often no infection on the premises. The two lots of suckers, then, are hardly comparable. By far the greater number of the suckers dealt with were born of sows deemed to have been exposed to infection, and treated.

Comparative mortality including slaughter in treated and non-treated pigs of various classes on the same premises:—

	Number.	Died s. f.	Slaught'd for food.	Combined s. f. and slaught'd.	Alive, freed.
		p/c	p/c	p/c	p/c
Breeding Stock,					
treated	4,761	10·8	21·9	32·7	66·8
non-treated	459	7·6	58·0	65·6	34·2
Fattening stores					
treated	31,303	21·6	34·9	56·5	42·9
non-treated	6,016	5·1	78·9	84·0	15·0
*Suckers treat'd	10,953	25·0	6·4	31·4	65·6
* non-treated	6,346	20·5	1 2	21 7	74·9

Deaths from illness other than swine fever are omitted.

* Were not suckers throughout the outbreak.

A considerable number of swine ailing at the start were not treated but were left with the treated pigs, with a view to giving the latter active or prolonged immunity while under the influence of serum. Also it was not always practicable to treat many of the suckers which were born from day to day, say, five one day and five another, on different premises.

Recoveries—untreated. By following the fate of such animals as became affected, it is possible for the first time since swine fever was scheduled to form an approximate idea of the proportion of untreated pigs which may be expected to recover from an attack of swine fever in average outbreaks, leaving out of account those mild outbreaks with which the authorities do not get into touch. Out of 430 breeding stock (ailing and untreated), the recoveries were approximately under

20 per cent. Out of 4927 fattening stores (ailing and untreated), the recoveries were approximately under 15 per cent. Out of 769 suckers (ailing and untreated), the recoveries were approximately under 12 per cent. [That is, the losses were respectively over 80, 85, and 88 per cent.]

Treatment of Suckers. The question of giving adequate treatment to suckers is a complicated one. They are born at odd times, and it is not always practicable to send a Veterinary Inspector frequently enough to ensure that each lot will be treated soon after birth and before they meet infection. Further, a dose of serum only gives immunity for about ten days if the passive resistance is not converted into active or lasting immunity by direct exposure to infection while serum is acting. In many cases, however, the suckers escape contact with the infection during the first few weeks of life, before they begin to run about freely.

Theoretically, then, suckers to be adequately protected should receive repeated doses of serum, about every ten days, until they are old enough to have mixed freely with the older pigs in which infection still exists, or until infection has died down on the premises. This is not practicable on a large scale, and many suckers are caught by infection after temporary resistance acquired from a dose of serum has passed off. A certain amount of information on the advantages of repeated treatment of suckers in the midst of infection is available from these observations carried out under the conditions obtaining in practice. In 6756 suckers which were treated once, and of which the subsequent history could be followed, the death-rate was 27·9 per cent., as compared with 14·5 per cent. in 2449 suckers which were treated twice.

LIMITATIONS.

It would appear from observations and analysis thereof, that certain limitations are put upon the results obtainable from serum treatment by the conditions under which it has to be applied in practice. These limitations arise :—

(*a*) Mainly from the authorities being dependent upon owners for immediate notice of suspected outbreaks, and

(*b*) That it is seldom either practicable or useful to apply serum treatment before disease has appeared on premises ; on an average, about 30 per cent. of the pigs were dead or in the grip of infection before opportunity arose for treatment.

Notwithstanding these limitations, it appears that serum treatment achieved very considerably better results at infinitely less cost than other methods tried for dealing with swine fever. It would also appear that the effect of these limitations could be lessened by earlier reporting.

Vaccination.

Vaccination is the term applied to the operation of injecting suitable doses of serum and virus simultaneously with the object of ensuring that every animal will come in contact with infection while under the influence of serum, and so obtain active or prolonged immunity. The advantages of such a method, if not attended by too much risk, are obvious. It would enable us to act ahead of infection instead of being compelled to follow behind it, and it would enable us to provide a practically certain method of rendering pigs swine fever proof before meeting infection.

Methods of vaccination have been tried during the year on a considerable scale on certain selected premises. There is no doubt that pigs can be rendered swine fever proof for long periods, even for life. The mortality consequent upon the methods tried so far has been too irregular to justify their introduction into general service. On the other hand, vaccination is the method which promises the greater finality, and the important question of obtaining a method suitable for application in practice is engaging attention.

Cows that swim.

Just off the shore of one of the lochs of Wester Ross there is a low silted island, on which the grass grows rich and succulent. At low tide the island becomes a peninsula joined to the mainland by a neck of shingle, but at other times it is separated from the shore by a strait about 200 yards wide at its narrowest part with a considerable tideway. The merits of the grazing on the island have long been known to and appreciated by the cattle of the farm on the mainland, and successive generations of cows have been in the habit of swimming off to it to enjoy the *prés salés*. The cows of their own accord leave the beach, slowly advance into the salt water till they lose their footing, and then proceed to swim out. Their progress through the water is leisurely and deliberate. They swim with their bodies almost entirely submerged, their heads extended well forward so as to keep their nostrils above the surface, and the ridges of their backs just awash. Each year's calves take to the water quite readily under parental guidance, and soon learn to make the passage without any hesitation. If they feel tired on the way, they sometimes rest their heads on their mother's backs. Notwithstanding the tide which runs through the channel no casualty has ever occurred, although on one occasion a cow was carried away a considerable distance and landed on another island.

Not the least remarkable feature of the performance is the intelligent selection by the cows of the days on which to visit the island. There is no fresh water on it, and, accordingly, in very dry weather the cows make no attempt to go out to it, but after rain, when the grass is moist, they never fail to spend some hours there. It is not uncommon in the West Highlands for cattle to be compelled to swim out to island grazings on a tow-rope behind a boat, but in the present case it is the spontaneous action of animals effecting a passage themselves. The sea-bathing does the cows no harm whatever, but on the contrary, seems to agree with them thoroughly and keeps them fresh and clean. Their milk is excellent.—H.P.M. in *The Scotsman*.

OBITUARY.

JOSEPH ANDREW LIPSCOMB, M.R.C.V.S., Southampton. Graduated, Lond : April, 1873.

Mr. Lipscombe died 25th August, 1917, aged 65 years.

SUBSCRIPTIONS TO R.C.V.S.

The Secretary of the Royal College of Veterinary Surgeons begs to acknowledge the receipt of the following subscriptions for 1917 :—

A. A. Johnson, Capt. N.Z.V.C. (1916, 1917)	£2	2	0
J. F. B. Moody, Lincoln's Inn, W.C.	1	1	0
P. J. Mulcair, Limerick	1	1	0
J. Thompson, Capt. S.A.V.C.	1	1	0
Previously acknowledged	864	10	0
	£869	15	0

In order to assist in the economy of paper, the authorities of the Royal (Dick) Veterinary College have decided not to issue a calendar for the session 1917–18. The particulars given in the calendar for 1916–17 apply, with very little alteration, to the ensuing session.

ARMY VETERINARY SERVICE

Extracts from *London Gazette*,

WAR OFFICE, WHITEHALL, Aug. 31.

The King has been pleased to give and grant unto the following gentlemen his Majesty's Royal licence to wear Decorations which have been conferred upon them by the Sultan of Egypt :—

ORDER OF THE NILE.—FOURTH CLASS.

* * * *

Maj. G. P. Knott, A.V.C., late Egyptian Army and Sudan Govt. Service.
Maj. T. A. Nicholas, A.V.C., Sudan Govt. Service.
Capt. L. Daniel, A.V.C., Sudan Govt. Service.
Capt. W. St. J. F. McCartney, Vety. Dept., Egyptian Army.

REGULAR FORCES. ARMY VETERINARY CORPS.

Aug. 30.

Temp. Lt. to be temp. Capt. :—S. C. J. Bennett (July 25).

Sept. 1.

Maj. (temp. Lt.-Col.) A. F. Deacon relinquishes the rank of temp. Lt.-Col. on vacating the appt. of S.V.O., British Remt. Commn. (July 1).

Majors to be actg. Lt.-Cols. whilst empld. as Asst. Dirs. of Vety. Servs. :—J. A. B. McGowan, R. C. Cochrane, F.R.C.V.S., E. B. Bartlett, G. Conder, D.S.O., J. J. Griffith, D.S.O., O. S. Fisher, H. Gamble, F.R.C.V.S., B. L. Lake, D.S.O., C. E. Steel, M. St. G. Glasse, W. H. Nicol, H. S. Mosley, D.S.O., E. M. Perry, T.F., A. England, Res. of Off. (June 16).

To be actg. Majors whilst empld. as Dep. Asst. Dirs. of Vety. Servs. :—Temp. Capt. C. W. B. Sikes (June 17); Temp. Capt. J. H. Taylor, M.C. (June 24); Capt. T. J. Faithfull, Spec. Res., Capt. D. R. Williamson, Spec. Res., Capt. A. W. Reid, T.F., Capt. J. S. Bowden, T.F., Capt. P. Abson, T.F. (June 25); Capt. F. R. Roche-Kelly, Capt. F. B. Sneyd, Spec. Res. (June 26); Capt. P. D. Carey (June 30); Capt. A. N. Foster, T.F. (July 1); Temp. Capt. W. B. De Vine, M.C., Capt. J. H. Wright, T.F. (July 4); Capt. A. B. Bowhay (July 5).

Temp. Lieuts. to be temp. Capts. :—R. W. D. C. Easom, D. A. Gilmor, T. L. Wright (Aug. 1); W. H. Wood (Aug. 4); A. Carter (Aug. 7); J. Anderson (Aug. 9); J. Bell, W. M. Rouse (Aug. 15).

To be temp. Lieut. :—A. F. Lamont (Aug. 16).

Sept. 3.

To be temp. Lieut. :—J. J. M. Barry (Aug. 18).

SPECIAL RESERVE OF OFFICERS.

Aug. 30.

The following Lieuts. (on prob.) are confirmed in their rank :—P. F. Woodland, E. C. Bowes, M. Farrelly.

CANADIAN A.V.C.

Aug. 30.

Temp. Lt. to be temp. Capt. :—P. P. Souaillard (Sept. 22, 1914), (substituted for *Gazette* notification May 12, page 4,615, incorrectly describing name as P. P. Souillard).

Temp. Lt. to be temp. Capt. :—J. H. Heenan (July 1, 1915), (substituted for *Gazette* notification May 12, page 4,615, incorrectly describing name as Hennan).

Sept. 5.

The *Gazette* notification May 12, page 4,615, regarding the promotion to temp. Capt. of temp. Lieut. J. J. O'Gorman is cancelled.

TERRITORIAL FORCE, ARMY VETERINARY CORPS.

Sept. 3.

Late Lieut. to be Lieut. :—E. Child, M.R.C.V.S. (Aug. 21).

Personal.

GIBBS—DU FOSSE DE BOSMELET. On the 18th Aug. at Le Fossé Church, by Monseigneur de Moucheron, Cousin of the bride, Major H. E. Gibbs, A.V.C., eldest son of Mr. and Mrs. H. F. Gibbs, 17 Abingdon Court, W., to Yvonne, only daughter of Baron and Baronne du Fossé de Bosmelet, Le Fossé, Seine Inférieure, France.

POISONING IN CATTLE BY RAGWORT.

Sir,—You state in your editorial notes of the last issue of *The Veterinary Record* that the first definite warning that the agriculturist in this country has received as to the poisonous nature of Ragwort on cattle is contained in an account of feeding results prepared by the Chief Veterinary Officer to the Board of Agriculture (Ireland). This statement is not correct. Some years ago there appeared in *The Veterinary Record* a communication from Professor Gilruth, in which attention was called to the fact that ragwort was frequently a cause of cirrhosis of the liver in horses and cattle, the symptoms consisting in jaundice, ascites, diarrhœa, wasting and weakness, and that experimentally two six-months-old calves, after daily feeding with ragwort, succumbed to liver cirrhosis.

[It is possible, though doubtful, that Mr. Gilruth's note on poisoning by S. Jacobæa may have appeared in an Agricultural Journal in this country. It is probable that at the time it appeared in these pages it had already appeared in the Agricultural Journals "down under." The point of last week's comment was that the old view, that diseases were invented for the benefit of the veterinary profession—a view tacitly implied by some of the older men in the past, is giving place to a *rapprochement* of the Veterinary Dept. B. of A. and the agriculturist, and that is slowly helping to place the practitioner in his rightful position—that of a skilled and trusted adviser to maintain the health of the stock. We are indebted to our correspondent for his addendum to the note.]

VETERINARY STUDENTS IN THE ARMY.

Sir,—On this subject I should like to record my views from the veterinary students' standpoint.

"Looking ahead" points out that there are only a few, if any, students serving in the A.V.C. The chief reason for this is, as always, young men have that instinct towards promotion which the A.V.C. denies them. A veterinary student in the A.V.C. to-day cannot give more professional assistance than that margined to a sergeant. Above that rank they become disciplinarians, and have little or nothing to do with the treatment of sick horses.

Little profit can a student gain from what he sees when attached to an unit at the front, as all serious cases leave him by L. of C. as soon as they are dressed, and he loses sight of the procedure of his "interesting case." A student attached to a hospital may benefit by experience.

Take the other student, who joined another branch of the service, he is open to promotion according to his merits. I have a student friend of this class who is O.C. of his unit with a temp. rank of major, while I, only a few yards away, and of about the same qualifications, am acting sergeant in the A.V.C.

A veterinary student who has served pupilage for two or three years under a good practitioner and a few years in Veterinary College, should be capable of holding a higher rank than the A.V.C. offers him, where horses are concerned.

Again, I do not think that this major would return to College for a couple of years, to be drafted out here again as a Second Lieut. in the A.V.C.—if the war is going to last a long time.

AT THE FRONT.

Alleged cruelty to a horse at Folkestone.

Before the Elham County Bench, on Thursday, Aug. 30 J. Coppings was summoned for working a mare while, in an unfit state, and C. Bishop was charged with causing the animal to be so worked, while T. H. Savage was summoned as the owner for permitting it to be worked.

Inspector Rodwell, R.S.P.C.A., stated that on the 8th August he saw Coppings. He told him that he understood that that day he had been taking a horse which was badly lame along Cheriton Road, and that he was stopped by a lady. Defendant replied, "Yes, and on Monday I was also stopped by some workmen because of the lameness, but I forgot to tell the foreman." Witness saw the horse at the stables at Cheriton, in the company of defendant Bishop. The animal was suffering, but in excellent condition, and clean. Its suffering arose from ring-bone, side-bone, and deformed foot. The joints were very stiff. Bishop stated that he considered the horse all right to do a bit of ploughing.

Miss Alice Morris, Ashley Avenue, stated that she saw the horse in Cheriton Road, very lame and evidently suffering great pain. She stopped the boy and examined the off fore-leg of the horse. The tendons were hot and inflamed, and the foot generally contracted. Cross-examined—witness said the boy told her he was taking the horse back to the stable because he had been stopped by a police constable.

Mr. H. B. Eve, M.R.C.V.S., described the diseases of the foot which made the mare lame, and which were sufficient to cause great pain. He said it would have been a very humane thing to have had the animal destroyed. The mare had evidently been unnerved at some time, and the nerve had evidently grown again. In his opinion the mare was quite unfit for work of any kind.

Mr. Coleman, M.R.C.V.S., a member of the Council of the College, and Veterinary Officer for Swindon, said he saw the mare on the 29th August in company of the Inspector of the Society and Mr. Eve. He corroborated the evidence given as to the diseases which caused suffering, and concluded that an operation had been made on the foot which was deformed. When he saw the animal it was in great pain, but he should say in less pain than on 8th August.

Mr. Savage said he did not himself understand horses. He purchased this one for light work on the land only. It had been drawing a plough for a day or two before it was stopped, but had not worked for quite a week before, because there was not much to do. It had been ploughing up potatoes only.

Mr. Clyde, M.R.C.V.S., of Dover, stated that the mare had a club foot, and nine or ten months ago he performed an operation on the foot to prolong its usefulness. He did not think there was much difference in its condition then and now, and it was quite fit for ploughing up potatoes. For a person who knew nothing of horses it was quite possible to think that there was no cruelty; in fact, he did not believe it walked in pain.

The Chairman: Not when there is heat?

Witness: The term heat I have no faith in; it is a mere term, which means practically nothing, and is of no use.

The defendants Bishop and Copping having given evidence, the Magistrates saw the horse outside the court-house, and after a conference in private, the Chairman said the owner would be fined £2, and Bishop, the foreman, £2. The boy, who was carrying out the foreman's orders, was ordered to pay the costs of the summons.—*Folkestone, Hythe, Sandgate, and Cheriton Herald.*

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.		Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
		Out-breaks (a)	Animals.	Out-breaks (a)	Animals.	Out-breaks (b)	Animals.	Out-breaks (b)	Animals.	(b)	Out-breaks (a)	Slaughtered. *
GT. BRITAIN. Week ended Sept. 1		6	6					27	40		28	15
Corresponding week in	1916 ...	7	8			1	1	13	27	2	63	32
	1915 ...	6	6			2	2	8	16	1	56	175
	1914 ...	6	9	3	17	1	1	2	2	1	52	180
Total for 35 weeks, 1917		328	376			18	32	1877	3649	395	1715	747
Corresponding period in	1916 ...	373	443	1	24	38	91	1692	3816	184	3296	8621
	1915 ...	418	478			37	66	581	1263	160	2992	13329
	1914 ...	518	564	14	91	73	219	1521	2633	153	2821	28939

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.
(a) Confirmed. (b) Reported by Local Authorities. † Counties affected, animals attacked:—
Board of Agriculture and Fisheries, Sept. 4, 1917 Excluding outbreaks in army horses.

IRELAND Week ended Aug. 25		...	...	...	...	...	...	Outbreaks 1	8	5	15
Corresponding Week in	1916 ...	...	...	...	...	...	...	1	11	5	36
	1915 ...	...	...	...	...	...	...	3	7	3	34
	1914 ...	...	...	...	...	...	...	1	5	3	23
Total for 34 weeks, 1917 ...		3	5	...	...	1	1	37	261	174	1043
Corresponding period in	1916 ...	3	7	...	...	...	...	47	273	219	1233
	1915 ...	1	1	...	...	1	3	52	292	173	983
	1914 ...	1	1	76	957	...	...	59	385	153	767

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Aug 27, 1917
NOTE—The figures for the Current Year are approximate only. * As Diseased or Exposed to Infection